

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-11 (cancelled)

12. (new) An anastomosis system for connecting a graft vessel to a target vessel, the graft vessel and the target vessel each having a lumen, the anastomosis system comprising:

an anvil having staple bending features defined thereon and an incising element connected thereto;

a plurality of staples, each staple configured to engage at least one of the staple bending features; and

a staple holder in which the staples are held, said staple holder moveable relative to the anvil.

13. (new) An anastomosis system for connecting a graft vessel to a target vessel, the graft vessel and the target vessel each having a lumen, the anastomosis system comprising:

an elongated anvil having staple bending features defined thereon and an incising element connected thereto;

a plurality of staples, each staple configured to engage at least one of the staple bending features; and

a staple holder in which the staples are held, said staple holder moveable relative to the anvil.

14. (new) The anastomosis system of claim 13, wherein the at least one staple comprises a plurality of U-shaped staples.

15. (new) The anastomosis system of claim 13, wherein each of the plurality of staples comprises a staple body and a plurality of tissue puncturing staple ends extending from the staple body and configured to be received by the staple bending features.

16. (new) The anastomosis system of claim 13, wherein the staple bending features each include a plurality of recesses.

17. (new) The anastomosis system of claim 13, wherein the staple bending features are grooves extending along the elongated anvil.

18. (new) The anastomosis system of claim 13, wherein said incising element is movable relative to said anvil.

19. (new) A method of performing anastomosis between a graft vessel and a target vessel, comprising:

placing the end of a graft vessel against the side of a target vessel at a first location;

inserting an anvil through the wall of the target vessel at a second location; and

deploying a plurality of connectors to secure the graft vessel to the target vessel.

20. (new) A method of performing anastomosis between a graft vessel and a target vessel, comprising:

placing the end of a graft vessel against the side of a target vessel at a first location;

inserting an elongated anvil through the wall of the target vessel at a second location, said second location upstream from said first location; and

deploying a plurality of connectors to secure the graft vessel to the target vessel.